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Human serum amyloid A (SAA) protein: a prominent acute-phase reactant for clinical practice.

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Serum amyloid A (SAA) proteins comprise a family of apolipoproteins synthesized in response to cytokines released by activated monocytes/macrophages. Acute-phase protein concentrations have been advocated as objective biochemical indices of disease activity in a number of different inflammatory processes. Clinical studies in large groups of patients with a variety of disorders confirmed the rapid production and exceptionally wide dynamic range of the SAA response. It is as sensitive a marker for the acute-phase as C-reactive protein (CRP). Recent studies indicate that SAA is the most sensitive non-invasive biochemical marker for allograft rejection. Further studies comparing the measurement of SAA to CRP could reveal other indications for its specific use. These studies are now more feasible given newer assays to measure this acute-phase reactant. Observations that the acutephase response is tightly coupled to lipoprotein abnormalities and the fact that acute-SAA proteins are mainly associated with plasma lipoproteins of the high density range suggested a possible role of this apolipoprotein (apo SAA) in the development of atherosclerosis. The expression of SAA mRNA in human atherosclerotic lesions and the induction of acute-phase SAA by oxidized low-density lipoproteins strengthen the hypothesis that SAA might play a role in vascular injury and atherogenesis.

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